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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,272	01/28/2004	Satoshi Kume	402959/TAKADA	7576

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EXAMINER

MACARTHUR, SYLVIA

ART UNIT PAPER NUMBER

1763

DATE MAILED: 02/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/765,272

Applicant(s)

KUME ET AL.

Examiner

Sylvia R. MacArthur

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1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 8-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 1-7 in the reply filed on 1/17/2006 is acknowledged.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Konda Masaharu (JP 03-203235-submitted in IDS).

Regarding claim 1: Masaharu teaches an etching method and apparatus comprising:

A chemical solution supply component and a UV light radiating component, see the abstract and Fig.2.

Regarding claim 2: The abstract states that the UV rays irradiate onto the substrate enable a fine hole and achieve etching. The emergence of this hole anticipates that the energy of the UV rays is higher than the binding energy of the constituent molecules. The molecules are dispersed forming a hole.

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4. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Hirae et al.

Hirae et al teaches a substrate treating method and apparatus.

Regarding claim 1: Hirae et al teaches a chemical solution supply 7 and a UV radiating component 31.

Regarding claim 2: Sections [0057] and [0063] teach that the UV lamps have energy that is higher than the binding energy of constituent molecules in the film causing the film to be etched.

Regarding claim 3: Fig. 2 illustrates that the UV unit moved in the vertical direction.

The actual location of distance above the surface of the film is a matter of an intended.

The apparatus of Hirae et al is inherently capable of moving within the desired range of 2 mm to 5mm.

Regarding claim 4: A light source is UV lamp 33, a storage component 31 accommodates the light source and has a light transmitting window (reflecting window 35) and nozzle 7 continuously supplies chemical solution.

Regarding claim 5: Stage (spin chuck 1) and a pair of guides (1a).

5. Claims 1,2, and 4 are rejected under 35 U.S.C. 102(e) as being anticipated by Otake et al (US 2003/0215751).

Otake et al teaches a method and apparatus for removing resist using functional water.

Regarding claim 1: Otake et al teaches a chemical supply nozzle (41) and a UV light radiating component lamps 20.

Regarding claim 2: Section [0051] states that the UV rays irradiate onto the substrate enable the resist to swell and achieve etching. The swelling of the resist

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anticipates that the energy of the UV rays is higher than the binding energy of the constituent molecules.

Regarding claim 4: The light source are lamps 20, a storage component (casing) for accommodating the light source and light transmitting window 11, and nozzle 41 is provided.

Regarding claim 5: Stage 31 is provided

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Otake et al or Hirae et al in view of Ikenaga et al (US Re 38,850).

The teachings of Otake et al and Hirae et al were discussed above.

Both fail to teach coating the transmission window.

Ikenaga et al teaches functional coating wherein windows are coated with a film to prevent condensation, see col. 45 lines 40-56.

The motivation to coat the transmission windows of Otake et al or Hirae et al is to prevent condensation on the windows and thus, allow the maximum amount of UV light to radiate the substrate, which would be inhibited due to such condensation.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Otake et al or Hirae et al in view of Kawamoto et al (US 2002/0061647).

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The teachings of Otake et al and Hirae et al were discussed above.

Both fail to teach switching valves.

Kawamoto et al teaches wet etching a semiconductor substrate and using switching valves 8,9,12, and 23.


The motivation to modify the wet etching systems of Otake et al and Hirae et al is provide a means of selecting and controlling the treatment fluid. Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to modify the wet etching system of Otake et al and Hirae et al to include switching valves.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R. MacArthur whose telephone number is 571-272-1438.

The examiner can normally be reached on M-F during the core hours of 9 a.m. and 3 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sylvia R. MacArthur
Patent Examiner
Art Unit 1763
Jan. 30, 2006